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PRAGMATISM AS INTERACTIONISM

I

THE doctrine of pragmatism or instrumentalism—which, however diverse its elements and its manifestations, has at least the unity of a continuous process of development—began as a theory about what thinking is; it has of late come to be chiefly a theory about what thinking does. Its point of departure lay in the provinces of logic and epistemology. James's earliest formulation of the doctrine was an attempt to define the conditions under which ideas and judgments possess meaning, and to formulate the generic nature of all "meanings." This soon developed into a theory concerning the nature of knowing, and the meaning, and consequently the criterion, of truth; and from this followed certain conclusions as to the scope of possible knowledge and the limits of genuinely significant philosophical discussion. These epistemological preoccupations, though not absent, seem distinctly subordinate in the latest collective manifesto of our American pragmatists, the volume of essays entitled *Creative Intelligence*. The outstanding thesis of that volume appears to be the one indicated in its title, that man's "intelligence" is genuinely efficacious and "creative." The several contributors (it is intimated in the prefatory note), while by no means professing any complete identity of doctrine, "agree in the idea of the genuineness of the future, and of intelligence as the organ for determining the quality of the future, so far as it can come within human control." There is, of course, in this nothing which conflicts with the earlier formulations of pragmatism to which I have referred; the thesis of the creative efficacy of reflective thought develops naturally from those earlier formulas, and from some of them, perhaps, necessarily. Nevertheless, a feature of the doctrine which earlier was often left implicit has now apparently come to be looked upon by pragmatists as their most essential and distinctive contention.

But with this shift of emphasis it becomes plain that the chief

significance of pragmatism lies in its bearings, not upon logic or epistemology, but upon metaphysics, and, more specifically, upon the philosophy of nature. Its principal quarrel—little as some pragmatists seem able to distinguish their enemies from their friends—should be with mechanistic "naturalism," with the dogma that the laws of the more complex and later-evolved processes of nature can be "reduced" to, and may eventually be deduced from the laws of the simpler processes—that "consciousness" is nothing but movements of the muscles, that muscular movements are wholly explicable by the principles of physiology, that the categories and explanatory principles of physiology can be " fetched back " to those of chemistry, these be resolved into the dynamics of the molecule, and the entire spectacle of nature, despite its seeming variety, finally be shown to be nothing but the manifestation of a few simple laws of the relative motion of particles or of mass-points. The opposition of pragmatism to this type of doctrine is evident from its denial of an essential part of the mechanistic creed—its denial, namely, of parallelism and all other forms of epiphenomenalism. Against whom but the epiphenomenalist does pragmatism need (in Professor Dewey's words) to "enforce the pivotal position of intelligence in the world and thereby in control of human fortunes (so far as they are manageable)"? Is it not the familiar mechanistic doctrine that

> The first morning of creation wrote
> What the last dawn of reckoning shall read,

that is described by Professor Dewey in the following terms: "Thinking was treated as lacking in constructive power; even its organizing capacity was but simulated, being in truth nothing but arbitrary pigeon-holing. Genuine projection of the novel, deliberate variation and invention, are idle fictions in such a version of experience. If there ever was creation, it all took place at a remote period."[1] But to this doctrine Professor Dewey tells us that the antagonism of his own philosophy is absolute. Similar protest against the "block-world" of naturalism is made by nearly all the writers in *Creative Intelligence*; the following passage, by Professor G. H. Mead, is typical: "The individual in his experience is continually creating a world which becomes real through his discovery. In so far as new conduct arises under the conditions made possible by his experience and his hypotheses the world . . . has been modified and enlarged."[2]

In an earlier volume Professor Dewey even more plainly indi-

[1] *Creative Intelligence* (hereafter cited as *C. I.*), p. 23.
[2] *C. I.*, p. 225.

cated the import of his own philosophy, by an express repudiation of Mr. Santayana's familiar and striking formulation of epiphenomenalism, first printed in this JOURNAL.[3] The belief "which attributes to thought a power, by virtue of its intent, to bring about what it calls for, as an incantation of exorcism might do," seemed to Mr. Santayana merely "a superstition clung to by the unreconciled childishness of man." "The consequences of reflection," he wrote, "are due to its causes, to the competitive impulses in the body, not to the wistful lucubration itself; for this is mere poetry. . . . Consciousness is a lyric cry in the midst of business." On the contrary, writes Mr. Dewey, "if one understands by consciousness the function of effective reflection, then consciousness is a business—even in the midst of writing or singing lyrics."[4] The essential thesis of the volume of *Essays in Experimental Logic* is "that intelligence is not an otiose affair nor a mere preliminary to a spectator-like apprehension of terms and propositions." In the eyes of a pragmatist, "faith in the creative competency of intelligence was the redeeming feature of the historic idealisms."[5]

In view of such dicta as these, one naturally looks to pragmatist writers for a connected and comprehensive discussion of the problem of interaction and of the older types of doctrine concerning the psychophysical relation. The passages which have been quoted from Professor Dewey and others, and many more like them, fairly bristle with suggestions of questions to which one desiderates answers from the same philosophers. What is this "intelligence" which the pragmatist apparently credits not only with the ability to push molecules about, but also with the power to enrich the universe with new contents? Does it or does it not include any entities or any processes not definable in ordinary physical categories? When matter is moved by "intelligence," is the intelligence itself matter? or a motion of matter? or a form of energy which must find its place in the equations of thermodynamics? or something other than any of these? How is the thesis of its efficacy in the physical world to be adjusted to the generalizations of physical science about the motion of masses and particles? Does that thesis presuppose such views about natural laws and their logical relations as have been set forth by Boutroux in his *Contingence des lois de la nature,* or a doctrine of the "heterogeneity and discontinuity of phenomena" such as is defended by Boex-Borel in his *Le Pluralisme?*

To these questions the representatives of pragmatism offer less

[3] Vol. III., 1906, p. 412.

[4] *Essays in Experimental Logic* (hereafter cited as *E. L.*), p. 18.

[5] *E. L.*, p. 30.

direct and less thorough and connected answers than could be desired; but we are not left wholly without light upon the matter. The nearest approach, so far as I can recall, to a fairly full treatment of this issue from the pragmatist's point of view, is to be found in Professor Bode's essay in *Creative Intelligence*. Here we get a somewhat extended statement of reasons for rejecting the "doctrine that conscious behavior is nothing more than a complicated form of reflex, which goes on without any interference on the part of mind or intelligence." According to parallelism, in Bode's words "intelligence adds nothing to the situation except itself. The psychic correlate is permitted to 'tag along,' but the explanations of response remain the same in kind as before they reached the level of consciousness. . . . The explanation of behavior, is to be given wholly in terms of neural organization."[6]

Such a view, Professor Bode contends, is inadmissible because it conflicts with clear empirical evidence; "some facts persistently refuse to conform to the type of mechanism, unless they are previously clubbed into submission." What are these facts? Professor Bode enumerates three: "foresight," "the sense of obligation," and the process of reasoning. The two former "must learn to regard themselves as nothing more than an interesting indication of the way in which the neural machinery is operating, before they will fit into the [parallelistic] scheme." Mr. Bode does not develop his argument here as fully as one could wish; he merely points out these two implications of epiphenomenalism and assumes that, once stated, they will immediately be recognized by the reader as absurdities. But the argument based upon the occurrence of reasoning in man is somewhat more explicitly stated; it seems to consist in the observation that, if parallelism (or a purely mechanistic behaviorism) were accepted, the notion of validity, of truth and error, would become meaningless. By the mechanistic theory "the progress of an argument is in no way controlled or directed by the end in view, or by considerations of logical coherence, but by the impact of causation. Ideas lose their power to guide conduct by prevision of the future, and truth and error consequently lose their significance, save perhaps as manifestations of cerebral operations. . . . [In] a description of this kind everything that is distinctive in the facts is left out of account, and we are forced to the conclusion that no conclusion has any logical significance or value."[7]

It is interesting thus to observe a pragmatist vindicating the most important thesis in his doctrine by a method which has most fre-

[6] *C. I.*, p. 251.
[7] *C. I.*, p. 257.

quently been exploited in recent philosophy by the partisans of idealism—the method, namely, of testing a metaphysical theorem by inquiring whether it is consistent with the postulate of the possibility of error, and whether it leaves room for a "world of values." Concerning the cogency of this or the other suggested arguments against epiphenomenalism I shall not, at this point, inquire; it is more to my present purpose to point out that, while thus attacking parallellism, Professor Bode apparently conceives that he can avoid falling into any position properly to be described as interactionism. By the latter theory, he observes, "a certain importance is indeed secured to mental facts"; but "so far as purposive action is concerned we are no better off than we were before." For "the mental is simply another kind of cause; it has as little option regarding its physical effect as the physical cause has with regard to its mental effect. Non-mechanical behavior is again ruled out, or else a vain attempt is made to secure a place for it through the introduction of an independent psychic agency."[8] "The only difference between the two doctrines"—and to Professor Bode this is apparently an unimportant difference—is "the question whether it is necessary or permissible to interpolate mental links into the causal chain."[9]

I am not certain that I understand either the criticism of the doctrine of interaction which these sentences are meant to convey, or the nature of the *tertium quid*—neither interactionism nor parallelism, as usually understood—which Professor Bode intends to propound. But if I at all follow him, his objections to admitting interaction are two, involving quite distinct considerations. (*a*) The first objection would seem to be based upon the assumption of a sort of indeterminism. Even the theory of interaction assigns "mental" causes for physical events; and Mr. Bode seems to imply that the recognition of *any* kind of cause "which has no option with regard to its effects" amounts to a denial of the "creative" efficacy of consciousness. Behavior is apparently still too "mechanical" if it is subject to any uniform determination whatever. Here we have the Romantic, the ultra-Bergsonian view, which rejects both mechanism and ordinary interactionism for, ultimately, one and the same reason, *viz.*, that they both seem to exclude "invention," pure innovation, true freedom. (b) But Professor Bode's other suggested objection to interactionism appears to be brought from quite another quarter of the philosophical horizon. It is that the interactionist attributes efficacy to a "psychic agency," whereas nothing "psychic" exists, either as an active or an otiose element in reality. This, at

[8] *C. I.*, p. 253.
[9] *C. I.*, p. 251.

least, I take to be the point of a passage of Professor Bode's in which he explains the source of the "difficulties" about interaction, and, indeed, of "most of our philosophic ills." That source is "the prejudice that experience or knowing is a process in which the objects concerned do not participate and have no share." This error, it seems, has led philosophers to invent imaginary entities in order to solve spurious problems generated by the error itself. But "a careful inventory of our assets brings to light no such entities as those which have been placed to our credit. *We do not find body and object and consciousness, but only body and object. . . . The process of intelligence is something that goes on, not in our mind, but in things:* it is not photographic, but creative."[10] From such expressions one gathers that Professor Bode further objects to the theory of interaction because it presupposes psycho-physical dualism —because it implies the reality of two classes of entities profoundly different in their attributes and modes of operation. "Bodies" and "objects" may, he intimates, be said to "interact," but not "bodies" and "minds"; for there are no minds. No facts are to be found in experience which require a "subjectivistic" or "psychic interpretation."[11] Even abstract ideas do not "compel the adoption of a peculiarly 'spiritual' or 'psychic' existence in the form of unanalyzable meanings."[12]

Of the two types of objection to interactionism thus suggested by Professor Bode, the former will not be considered in this paper. I omit it partly in the interest of brevity, partly because I am in doubt whether Professor Bode himself seriously means to assert the view which his words at this point seem to imply, and partly because it appears questionable whether other pragmatists share that view. But the second of his anti-interactionist arguments is an application to the question in hand of a thesis frequently recurrent in the writings of Professor Dewey and others of the same school. Most pragmatists apparently share with the neo-realist and the behaviorist a violent aversion to psychophysical dualism. Pragmatism, Professor Dewey writes, "has learned that the true meaning of subjectivism is just *anti*-dualism. Hence philosophy can enter again into the realistic thought and conversation of common-sense and science, where dualisms are just dualities, distinctions having an instrumental and practical, but not ultimate, metaphysical worth; or rather, having metaphysical worth in a practical and experimental sense, not in that of indicating a radical existential cleavage in the

[10] *C. I.*, pp. 254–255; italics mine.
[11] *C. I.*, p. 270.
[12] *C. I.*, p. 245.

nature of things.''[13] For pragmatism, therefore, ''things are no longer entities in a world set over against another world called 'mind' or 'consciousness,' with some sort of mysterious ontological tie between them.'' The pragmatist ''tends to take sensations, ideas, concepts, etc., in a much more literal and physically realistic fashion than is current.''[14]

This hostility to dualism is, it is true, directed primarily and most frequently against dualistic epistemology, the doctrine that (as Mr. Dewey's unfriendly summary puts it) ''the organ or instrument of knowledge is not a natural object, but some ready-made state of mind or consciousness, something purely 'subjective,' a peculiar kind of existence which lives and moves and has its being in a realm different from things to be known.''[15] ''To say the least,'' observes Professor Dewey elsewhere, this conception ''can be accepted by one who accepts the doctrine of biological continuity only after every other way of dealing with the facts has been exhausted.''[16] But it is evident that when the pragmatist denies the reality of any ''psychic,'' ''subjective'' or ''mental'' entities as factors in cognition, he also, both by implication and intent, repudiates the dualistic presuppositions of the theory of psychophysical interaction.

Thus, to recapitulate, we find the pragmatist asserting the determination of (some) events—*i.e.*, of certain motions of matter—by a causal factor called ''intelligence'' or ''reflection''; insisting upon the uniqueness of this mode of determination, its irreducibility to purely mechanical or physicochemical or physiological laws; and at the same time denying the existence of any ''psychical'' (*i.e.*, non-physical) elements in experience or in ''behavior,'' whether as causes or effects or mere concomitants. The peculiar combination of doctrines, then, which constitutes the typical pragmatistic view upon the problem with which the older controversies between parallelism and interactionism were concerned, must apparently be described as an anti-mechanistic materialism.[17] Intelligence—it clearly

[13] This JOURNAL, Vol. II., p. 326.

[14] *Loc. cit.*

[15] *Influence of Darwin, etc.*, p. 98.

[16] *C. I.*, p. 35.

[17] I do not wish to be understood to assert that pragmatists in general, or even that any of the school, adhere to this position consistently; for they appear to me to adhere to no position consistently. I am, for example, after careful study of Professor Dewey's utterances on the subject, wholly unable to reconcile such passages as have above been cited, as to the ''physically realistic'' implications of pragmatism and its harmony with the ''realistic thought and conversation of common-sense and science,'' with numerous other passages of his in which pragmatism is identified with ''immediate empiricism,'' *i.e.*, with the

seems to follow from the conjunction of the passages already cited—is an affair of "bodies," not of "mind" or mental entities of any kind; but bodies, when they behave in the special fashion called "intelligent" or "reflective," are exhibiting a mode of action not exemplified elsewhere in nature; and by this action they cause the directions and velocities of motion of other masses to be different from what they would be if intelligence were (and where it is) inoperative. As Professor Bode puts it, we must recognize in what (with seeming incongruity) he calls "*conscious* behavior, a distinctive mode of operation," "the advent of a new category"; if we do not, "intelligence becomes an anomaly and mystery deepens into contradiction."[18]

Is this combination of doctrines, this attempt to vindicate the creative efficacy of intelligence while repudiating psychophysical dualism, a stable logical compound? Is it consistent either with pragmatistic principles or with the facts of that particular type of "situation" with which pragmatic analysis has been characteristically preoccupied? To these questions the next instalment of this paper will be devoted.

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THE OBSOLESCENCE OF CONSCIOUSNESS

BELIEF in what is vaguely called the subconscious exposes one nowadays to no risk of appearing mystical. The most tough-minded of mechanists can without apology direct his attention to the simmerings and eruptions of those subterranean psychic regions above which flow the quieter streams of waking life. In fact, the taint of supernaturalism having been removed from dreams, hypnotic trances, premonitions, and the sudden impassioned outbursts once

doctrine that only that which is immediately experienced can be known, and that things *are* (merely) "what they are experienced as." Such a doctrine, Professor Dewey declares, "doesn't have any non-empirical realities," such as "things-in-themselves," "atoms," *etc.* (*Influence of Darwin*, p. 230); yet such things, surely, play a great part in the "realistic thought and conversation of common-sense and science." The truth is—as I have, I think, shown in a paper in the forthcoming volume of *Essays in Critical Realism*—that the pragmatism of Professor Dewey and others involves a hopelessly incongruous union of two fundamental principles, "radical empiricism" and the true pragmatic method, of which the former is idealistic and the latter realistic in its implications. In the present paper, I am assuming that pragmatists mean what they say in their realistic passages, and am disregarding utterances which are in flat opposition to those passages.

[18] *Loc. cit.*

called prophetic, the disbeliever in immaterial realities tends, not to belittle these manifestations of subconscious activity, but rather to adduce them for his own uses. For they can be made to serve his cause instead of harming it, being at least no less explicable than conscious phenomena in mechanical terms, and serving as a kind of intermediary between waking consciousness and brute substance—softening the shock, so to speak, of directly imposing upon the mind of waking experience the unbending laws of mere matter and motion. But this recognition by mechanist and vitalist alike of the occurrence of mental operations dissociated from normal cerebration, far from simplifying the field of psychology, has actually rendered it more mysterious. Apart from all questions of the origin and destiny of this astonishing Awareness of ours, there presses upon us with increasing urgency in these latter days of scientific explanations the problem of what *awareness,* could we scrutinize a slice of it at leisure, would turn out to be. How deeply is it rooted in the primeval slime of racial experience, how saturated with vapors exhaled from the twilight regions of brute instinct and unarticulated feeling, how essentially nourished by those inward secret streams that flow forever and only rarely cast up to view their spoil? Of what avail are theories, statistics, psychophysical measurements, psychoanalyses, to rescue us from our ultimate perplexity? In this twentieth century in larger measure than ever before does man contemplate with amazement the persistent shadow—if it be no more than that—that is attendant upon the bundle of tissues that constitutes himself, the little strain of music emitted from his integrated nervous system into the boundless ether and not to be drowned out by all the hum and rumble of neural machinery.

That this consciousness of man's is not only inexplicable but precarious—no better assured of continuance than a candle flame blown by a tempest—is occasionally borne in upon him while under the spell of hypnotic rhythm or on the brink of oblivion in sleep. Indeed, not merely the insecurity of his tenure of waking consciousness but the unimportance of his loss of it, calls a halt now and then upon the self-congratulation of its possessor. How much that is useful and skilful and even inspired seems to occur quite well without any intervention whatsoever of the greatly vaunted waking self! In fact, some performances actually appear to profit from the absence of any controlling oversight: feats performed in sleep, *e.g.,* and all the reflex actions that far surpass in speed and accuracy acts performed to the accompaniment of feeling and volition. There are even the highly efficient performances of animals to take account of, complex acts that could not be improved upon by interference of

any deliberation and will, however purposive. Last of all, the responses of the lowly individuals of the plant world are, some of them, as undeniably efficacious, as well adapted to an end, as rational, so to speak, as many of the responses of the lordly creature man, with his intermittent consciousness periodically drowned by forgetfulness. In the face of so much that is good and fair and useful, though unconscious, in the motions of the whole creation, how may the unique owners of an unsubstantial possession composed of sensations and enjoyments and regrets, shifting memories, unfulfilled hopes, resolves and hates and loves, maintain the unqualified desirability of their treasure? If a flower can fold its petals against a poisonous intruder and open them to what will nourish, if an insect can establish a complex social organization and live with its associates in industry and peace, if a bird can provide for the future preservation of its unborn young, if man himself can manifest in his entirely uncontrolled and automatic actions an economy and efficiency surpassing that of his laborious and blundering conscious efforts—why should he so absurdly cherish that little flicker of awareness on which he bases his claim to supremacy? Such vast accomplishments since the days of the first blind protozoon! And what is to prevent the process of evolution continuing, causing rational and esthetic performances like their predecessors to fall under the control of an automatic nervous system, dropping out forever the accidental by-product called consciousness along with other disused and clumsy expedients?

Well, the cherisher of consciousness can very well reply that the thing he prizes is not necessarily a unique possession of the race of man, but merely the most admirable in the line of development from its progenitors in elephants and seals and nightingales, in daffodils and the inhabitants of the sea. All the brute performances supposedly automatic may be, he will insist, controlled by a consciousness quite as surely as are the most deliberate of deeds—in the case of animals by a consciousness of lesser span than human, in the case of human reflexes merely by another consciousness dissociated from the dominant one of waking life. But of such a state of affairs there can be neither proof nor disproof, any more than of the other possibility according to which consciousness, like caudal appendages, horns and fur, will perish when its brief utility is over, leaving the race to progress unimpeded by an accessory involving pain and conflict and hesitation.

Without pausing to argue for or against these possibilities let us rather try to reach a full understanding of the extent to which human beings, whether wisely or foolishly, dote on this

consciousness of theirs that brings them anguish as well as pleasure, frustration no less than success. Consciousness, let us be quite clear about the fact, is cherished for its own sake, it is wanted in maximum intensity and duration entirely irrespective of any end to be accomplished. So desirable does it appear to its pursuers that they frequently court pain in default of pleasure as preferable to a state of indifference with mental vitality at low ebb. Exceptions do occur, to be sure, even among the lovers of life; the majority of us crave sometimes a slackening of the pace and temporary forgetfulness. But for the most part we can scarcely get our fill of feeling and desire and struggle, of awareness of the world and of ourselves and all the throbbing poignant life that possesses us. In view then of the practically universal desire for consciousness it should be not without interest to inquire whether man in the process of development shows signs of forfeiting some portion of that awareness which he so passionately covets. As he progresses from babyhood to childhood, from childhood to adolescence and thence to full maturity, does he, in exchange for an ever-increasing efficiency and fuller appropriation of the fruits of his own past and that of the race, lose disproportionately in fulness of consciousness?

That at least one phase of his development entails some loss of volitional and conscious control involving a lapse from attention of a certain portion of experience, needs no proof. The abundance of his acquired reflexes is commonly accounted one measure of man's progress; and the acquiring of reflexes is admittedly the acquiring of unconsciousness. Nor is there need to praise the capacity for this acquisition. It is a fact admitting of no controversy that man the automaton is quicker, surer, more efficient, in the accomplishment of set tasks than is man the conscious director of his actions. What is not so usually considered is the possible disadvantage of this talent which human beings possess for stereotyping their activities.

To the child, the blundering performance of absurdly simple motions is sufficient cause for ecstasy. The attention of the very young is, at least for the moment, completely captivated by the task in hand, and concentration sufficient to move the earth upon its axis is bestowed upon the execution of the appropriate movements. None of us after our early days is able to thrill with delight over successfully carrying a spoon to our mouth, or over navigating upon our own feet across the floor. In becoming automatic these performances lose the power of yielding pleasure, since attention, no longer requisite, lapses altogether, and with it the sense of activity and power which was its accompaniment. "The result," the properly informed critic will retort, "being wholly advantageous. When at-

tention is no longer required for the commonplace actions by which we maintain our bare physical existence, then it can turn to better things. Only by virtue of his ability to walk and eat and dress himself mechanically is man enabled to appreciate beauty, to reason profoundly, to create his universe of justice and right. The very condition for his higher development," our critic will continue, waxing enthusiastic, "is his capacity to become an automaton on the lower levels of activity. Man could never have achieved the character of genius if he could not also have achieved that of a machine."

The truth contained in such a line of argument will resist any challenge. It is undoubted that the capacity for attending is limited and that there are more valuable sources of elation than the voluntary control of movements capable of becoming automatic. What we must now discover is what becomes of consciousness when it is released from absorption in humbler activities and passes onward and upward to more seemly things.

Perceptions constitute that class of man's experiences which we must first examine, and concerning these there is a fairly general superstition to be reckoned with. That superstition is to the effect that howsoever machine-like man may grow to be in his eating and walking and dressing of himself, at least in seeing, hearing, smelling, he is possessed of full consciousness. And not only of full consciousness but also of entire freedom from the trammels of his past. Muscles may acquire habits and work blindly in set grooves, but sense organs are windows to an outer world to which each individual has free access. When I open my eyes and my ears surely I experience newly and freshly, draining to the dregs that awareness of myself and my environment which once was likewise mediated by performances now grown automatic. By reason of decreased preoccupation with muscular efforts, consciousness is released, without question, and the conclusion that it thereupon pervades with greatly increased volume the process of cognition may appear to be a reasonable one. Very little reflection is necessary however for the winning of evidence decidedly damaging to that usual and happy conclusion.

The kind of instance which such reflection seizes upon for the confounding of orthodox opinion is that of such perception as mediates, not the actually presented, but the usual and therefore anticipated. Each hour of our everyday life is packed full of this pseudo-perception—perception qualified and supplemented by expectation, supposal, inference; perception abjectly modeled upon previous experience and subject to the latter's limitations. But, it

may be objected, the very definition of perception as distinguished from crude and formless sensation provides for just such supplementations. The acquirement of meanings is precisely conditioned by the mind's power to transcend the present and incorporate in its findings the fruits of the past. And surely such transcendence betokens, not decreased intelligence, not relapse into the state of an automaton, but an enlargement of consciousness.

Substantially, such contentions are of course true. Perception, as distinguished from sensation, does indeed involve elliptical processes of comparison and interpretation—or more exactly, the consequences of such processes in the past—without thereby forfeiting immediacy; meanings, which result from a kind of telescoping of earlier experience, do make up the more significant part of what the mind apprehends; and it is indubitable that the complete apprehension of such meanings involves a mental strenuousness, an energy of attention which an entirely meaningless jolt to the nervous system can seldom if ever elicit. Furthermore, such tendency as is manifested by the process of perception to become stereotyped and thus to acquire the character of a reflex is, it may be argued, fraught with inestimable advantages for behavior. Consider the case of a practised reader who possesses the ability to derive meanings, the symbols of which are not completely perceived—even to supply missing letters or to substitute right ones in the words he reads. Except for the increased difficulty which this short-circuiting involves for the proofreader who seeks to apprehend, not meanings but their symbols, the phenomenon, it must be admitted, is an entirely fortunate one for the race. Indeed, the capacity of the mind to grasp the intended word, partly by outward perception, and partly—the residue of the perceptive process being suppressed—by a mechanical supplementation based upon prior experience, is evidence of a marvelous organization of effective intelligence.

There are other cases in plenty of unqualified benefits to be derived from the swamping of the actually presented by stereotyped contributions of the memory. Our recognition of things as unitary objects instead of confused masses and projections is, indeed, all of it conditioned by such swamping. In other words, immediate and accurate experience of those objects as possessing certain conventional shapes and fixed meanings occurs only by virtue of a highly integrated memory system composed of previous apprehensions of the various generic features dominating at the cost of an awareness of the concretely individual. There are frequent occasions when swift reflex action is a matter of life and death, and many such reflexes depend upon an instantaneous emergence of the generic even

at the cost of an extravagant suppression of details. If the idiosyncrasies of an express train bearing down upon us claimed our attention to the detriment of its generic character and meaning, the world would soon be disencumbered of us and all others possessed of that special variety of receptiveness. Other calamities would overtake such individuals as were incapable of diverting their attention from the details of the desk at which they worked, of the utensils they used, of the chairs they sat upon. In a word, the productiveness and efficiency of a person depend upon his ability to be blind to much that actually impinges upon his retina, deaf to a part at least of what enters his ears, and generally oblivious of whole portions of the solid insistent environment which is an inhibitor in the carrying out of undertakings.

But all this gain in practical efficiency comes at the cost of at least a certain degree of spontaneity and freedom. An assimilated past, effectual in the present, brings benefits, but it also entails a kind of slavery. It prevents that constant accession of new discoveries which would be possible were we capable of directly perceiving what is presented to our senses. That we are incapable of so perceiving is due partially to suggestion—to the decrees of others. The suggestibility of the hypnotized who experiences as he is commanded is only an exaggeration of the suggestibility of the normal human mind which abbreviates, exaggerates, modifies, the qualities of the perceived world in accordance with what other people declare that world to be. It is to our own habits of perception, however, that the major part of our enslavement is due. Previous experience here no less than in the matter of motor responses determines beforehand what our reaction will be. Accordingly, new beauties, unanticipated characters, unforeseen developments of the sensory world are veiled from us—unless, indeed, we possess the rare emancipation of the artist, or deliberately expend a large amount of energy upon an attempted enlargement of our experience. Moreover, not only is increased consciousness made difficult, but such explicit awareness as there is tends to lapse, exactly as in the case of motor reflexes. In other words, perception, in becoming more efficient, *i.e.*, more adapted to the mediation of an individual's generic responses to his environment, becomes more stereotyped: approximates to the character of a reflex. Once again attention, emancipated from so-called lower concerns, is supposed to take flight to yet loftier regions where the functioning of consciousness at its freest and best is both more urgent and more replete with satisfaction to its possessor.

This final refuge is the field of judgment.

It would be no new indictment of the human mind to declare

that in his evaluations man is slavish. The charge has been made by all who, striving to bring about a new order, have met defeat in their clash with conservative and stereotyped opinion. It is made by countless critics who find in that slavishness the chief obstacle to human advancement; but it is made also by others in whose opinion docility is creditable. On behalf of this latter point of view there are, of course, certain arguments. For example, in the interest of solidarity and stability it is fortunate that human beings tend to perpetuate traditional estimates of what is good or evil. The greater the docility in this respect, the more firmly are men linked together into groups and the achievements of the past made secure. Even for men individually a lack of independence of judgment is not without advantage. Most of us are unlikely to be capable of arriving at conclusions as sound as are the best-tried conclusions of past generations. If attainment of truth be a primary object it would seem well, then, that the less intelligent specimens of humanity, at least, should be content to borrow their opinions. Again, if individual efficiency be desired for its own sake there should be no deploring a tendency to economize effort in a direction which does not necessarily make for that efficiency. But all such argument is based on the belief that practical efficiency and social benefits are necessarily to be sought even at the cost of full development of individuality and will-power. That belief may gain considerable currency in a generation like our own worshipful of gregarious productiveness; but it is in conflict with the deeply-rooted desire for freedom and fulness of consciousness which appears to be practically universal.

Our behavior, unhappily, is moulded upon the belief rather than upon the desire. How many individuals ever achieve sufficient independence of mind to gaze coolly upon the institutions and conventions which they have inherited? And yet—not necessarily for reversing the judgment of one's fellow-men, but merely for the attainment of a complete awareness of the values in question—how salutary would be the periodical attempt thus to gaze upon them! Most men believe that their disapproval of drunkenness, lying, pacifism, polygamy, filial insubordination, anarchism, infanticide, free trade, and free immigration is based on sound reasons which they have meditated upon and felt to outweigh all opposing arguments. As a matter of fact, their lack of personal responsibility for their opinions on these subjects is appalling. Such support and guidance as they have failed to derive from older traditions, religious and national, they have quickly sought and found in the stereotyped phrases of their social equals and the unscrupulous propaganda of

the press. Better, almost, would it be to approve cheating and murder with fully considered reasons and hearty independence of conscience, than to revile them with about the same degree of awareness and volition with which we withdraw our hand from hot iron or sneeze when approached with pepper. Not, as has been said, that the transvaluation or revaluation of all values need lead to an entirely original valuation. Certain aberrations from traditional estimates might occur—in some cases bringing about a more enlightened social structure; in some others, perhaps, a regrettable loss of truth for a few individuals. But presumably the greater number would abhor drunkenness and insubordination—either from the intrinsic vileness of these things or from congenital stupidity. In their practical effects, moreover, slavish judgments and free might be indistinguishable. But to the person making the judgment, the difference would be inestimable.

Man, it is clear, must in his encounter with good and evil recover the full strength of his primitive alertness. Otherwise the progressive lapse of consciousness from the level of reflex action to that of immediate perception, and from there to the level of judgment, would prove to be no fortunate circumstance but an ominous forecast of a final evaporation of consciousness altogether. Supposing, however, complete independence in the discrimination of values to be attained, though without any attendant increase of consciousness in the more elementary processes of action and perception, should we then consider man to have achieved the highest development possible, or would certain goods still be lacking? The question broaches one of the most difficult and important problems in all ethical theory—the problem of compromise between goods mediate and immediate. On the one hand there is the ideal subscribed to by those who lay exclusive emphasis upon the life-enhancing value of immediate perceptual experience; on the other, the ideal of those for whom the body is the spirit's ignoble rival, or, at best, its mere container. Except for the sybarite and esthete at the first extreme, and the pedant and Puritan at the second, all men believe in some sort of fusion of the two ideals; it is only the exceptional and not altogether human individual who sincerely advocates either soullessness or anemia. The perplexing matter remains, nevertheless, as to the proportions to be selected for the attainment of a proper balance. If consciousness is more capacious and more ravenous for experience than appears to be assumed by those who plead for its economy, presumably it has none the less certain limits. How then shall man exploit to the full his rich resources for intensified living without sacrificing the interests of the spirit to those of the body and senses, and without fostering

abundance of consciousness in complete disregard of the claims of efficiency? The intrinsic value of each sort of self-realization must be weighed, but also their relative importance in case of conflict must be estimated.

It is not within the plan of this discussion to offer any scheme of solution for this ethical problem in evaluation. But it may in conclusion be suggested that however numerous the difficulties that confront those engaged in that evaluation, at least the conflicts between the "higher" and "lower" interests are less frequent than might be supposed. Latter-day esthetic theory has increased our understanding of the profound emotional significance of the physiological reflexes. We now realize that consciousness of heart-beat and breathing is not only a source of exhilaration for the savage, or for civilized man in his pagan and unthinking moments, but that it contributes powerfully to the highly developed experience of the beautiful. How many potentialities for a primitive kind of delight, quite compatible however with a loftier variety of emotion, may not then reside unused in vital processes from which our attention has been almost wholly weaned! We are supposed to congratulate ourselves upon our absence of attention to all the activities that make for bare maintenance of life. Let us rather lament that we do not drain to the full the realization of the blood coursing through the body, of the strain and pull of muscles, of the flexing of the limbs, and the swaying rhythm of posture—in a word, of every bit of vitalized substance, flesh and sinew and bone, that is the projection into space of the quivering life of an insubstantial awareness. We have seen the argument against all such expenditure of attention—the argument of economy and efficiency. Shabby enough it looks, making consciousness out a scanty thing, barely to be stretched over even a fragment of what is contained within the body. We are supposed to congratulate ourselves, furthermore, upon our habit of letting sense-perception fall back on habit. But there is no necessary conflict between the higher processes and the activity of the senses. A pitiably meager world it is we most of us inhabit, filled with things stereotyped by many repetitions, and shorn of all that makes them unique. And yet that world is actually one of kaleidoscopic variety, full of iridescences in the very mud of the streets, and with everlasting movement of light and shadow every instant making new and unfamiliar the entire creation. Some measure of the artist's absorption in the moment, and the strange enchantment of that absorption, might without prejudice to our intellect be sought by every one of us.

The antithesis of consciousness and efficiency is not so easily dis-

posed of. The world will always divide into two parties—those who recommend intensity of living at any price, and those who regard emotion as subsidiary to practical performance. Perhaps there can be no ultimate agreement between them. The fact remains, however, that with the exception of the few who covet Nirvana we all crave fulness of consciousness. Something of the difference between an attenuated consciousness and one of that complete resonance we crave may be imaged by means of a figure. Bits of brass, each keyed to a different pitch, and uncomplicated by the presence of overtones, will give a melody—cold, pure, complete in itself. Substitute a stringed instrument or a flute for the bits of metal, and the same melody will come, but richer in quality, each note containing within it faint hints of a wider range of harmoniousness. One by one add other instruments until we have a full orchestra: the melody will still emerge from the welter of sound, recognizable, but yet more miraculously enriched. For throughout its silences and woven into its very tissue come the deep reverberations of the accompaniment giving it increased substance and a new significance.

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RELATIVITY, NATURE AND MATTER

IT was inevitable that a theory of such outstanding importance as that of relativity should ultimately extend its influence to philosophy; and the following remarks, suggested by Professor Eddington's theory of matter,[1] are primarily from the purely philosophic standpoint, although from this the scientific aspect can not be dissociated.

1. From that standpoint, then, I think too much is read into the theory itself in regarding it as introducing "new conceptions of space and time" in any strict sense of the phrase "new conceptions." It would be truer to take it as achieving a more accurate *definition* of space and time intervals—as making their meaning more precise and definite, but without transforming them into anything "new." As Campbell has already pointed out long ago, the principle of relativity does "not render it necessary to abandon the hope of defining a time valid for all observers; (it is only) necessary to change somewhat the definition of that time. . . . We have (again) only to change our definition of length."[2] It is im-

[1] "The Meaning of Matter and the Laws of Nature according to the Theory of Relativity," *Mind*, April, 1920, p. 145.

[2] *Modern Electrical Theory*, pp. 371, 373. Philosophic readers may be interested in the very clear and concise account of the (old) theory given by Campbell here.

portant to bear this in mind, for otherwise the popular idea that the theory has "revolutionized" our ideas receives undeserved support.

But it is possible to take a deeper view, and trace in Professor Eddington's suggestion the fatal influence of subjective idealism, which philosophy itself is beginning to repudiate anew, but which still represents its last word to many scientists; so much so that Professor Eddington regards the principle that "the mind from the crude substratum constructs the picture of a substantial world" as being ontological, and calls this fundamental confusion "a commonplace" (p. 145). In other words, he mistakes the psychological "crude substratum" in which knowledge begins for the ontological basis on which the known world rests: "the World . . . is the universal substratum of things" (p. 148).[3] Such an error need not of course affect pure science itself, except perhaps psychology; unfortunately when science deals with its own ultimates it can not but become philosophic, and then the consequences of such an initial standpoint may become serious. Here, *e. g.*, the result is an immediate and incurable dualism between "external world" on one hand and "laws automatically imposed by mind" on the other;[4] between "properties" which can be described and a "nature" which can not—which is indeed noümenal and "outside the range of human understanding" (p. 147). Thus we obtain finally a noümenal World as the aggregate of all point-events, which has however a property ("is four-dimensional") which can be logically defined and which may therefore be called phenomenal. Further, between these noümenal point-events there is a relation, the "interval," also noümenal, since "its real nature is beyond our power to conceive" (p. 148). Evidently it is possible to know more about the new scientific noümenal world than about its philosophic predecessors; for an interval, in spite of being noümenal, can be measured practically; but perhaps this merely means that some of its (phenomenal) properties can be practically ascertained.

This World again appears to be spatial, for it has "adjacent portions—regions . . . philosophical space-time has been implicitly introduced in postulating the World to be four-dimensional" (pp. 148–150). But space and time are also (in some sense at least) objects of experience; in another aspect "derived concepts of con-

[3] Another striking recent instance is afforded by Mr. Elliot's *Modern Science and Materialism*, Introduction. I mention this as evidence of the philosophy mainly current in scientific circles.

[4] "Automatically" however conflicts with this dualism, for it implies that the (ontological) "crude substratum" is amenable to laws whose formation again is determined by the principle of the automatism. Thus the "crudeness" at once disappears, and we get a whole of complementary parts—world and mind—subject to a common principle. See below on "embryo mind."

siderable complexity'';[5] but possibly what is meant is that the noümenal World has the phenomenal properties of time and space. It is extremely interesting to find that the theory involves certain absolute elements—''an absolute relation . . . a definite and absolute condition of the World . . . an intrinsic absolute difference'';[6] so that apparently even pure relativity demands some kind of absolute.

2. This brings us to Professor Eddington's theory of matter and of natural laws. This ''absolute condition of the World . . . is common to all parts of the world which are empty of matter . . . that condition . . . gives us the perception of emptiness.'' This raises a serious difficulty; for while our ''perception of emptiness,'' as a *perception*,[7] is perfectly trustworthy and justified, it is plainly from any scientific standpoint (*i. e.*, the conceptual) wholly illusory; for (*a*) no one has ever perceived absolute scientific ''emptiness''; but (*b*) even could this be produced and perceived, still no difference would be perceptible between it and space occupied by invisible gas, which *perception* most frequently interprets as empty. Thus the perception of emptiness, which Professor Eddington suggests is due to this ''absolute condition of the World,'' is actually due to a radically different condition—to the World when matter is present in the form of invisible gas; and further, even if these two different conditions could be brought separately to affect the mind (in Professor Eddington's words, make an impression on the senses) still no difference whatever need necessarily be perceptible, and the theoretical suggestion he advances becomes quite untenable.[8]

In this connection again, what is meant by matter being an ''object of experience''?—''the corresponding property of the world is perceived by us as a distribution of matter.'' For light is also ''an object of experience'';[9] but (quite clearly) never in the same sense as is matter; the levels of experience are quite different in the two cases, experience of light being mainly if not indeed wholly perceptual, while that of matter again is conceptual (though its properties or attributes are perceived). No theory whatever is

[5] P. 147. These aspects need not conflict, since the concepts must be derived from experience; but here no distinction whatever seems to be recognized between perceptual and conceptual experience; see also note 8 below.

[6] Pp. 150, note, 151, 148.

[7] P. 151. I mean in ordinary uncritical experience, for criticism, as I proceed to show, at once destroys Professor Eddington's contention.

[8] In view of the phrase ''impression that condition would make on our senses'' it would appear that Professor Eddington intends not to go beyond perception. Further on, however, we have ''a quality which mind recognizes under the name of emptiness.'' Quite obviously this implies conception, and from the philosophic standpoint hopelessly confuses the issue; but again if taken conceptually equally serious difficulties arise. *Cf.* note 5 *ante*.

[9] Pp. 151, 146.

possible unless this distinction is recognized and strictly adhered to, which is certainly not done here.

3. It is difficult again to reconcile the following assertions:

(*a*) "Einstein's theory asserts as a law of nature . . . the new law of gravitation."

(*b*) "Einstein's law of gravitation is not a law of nature but the definition of a vacuum."[10]

Here there seem to be only two alternatives; either Professor Eddington contradicts himself, or he contradicts Einstein—*i. e.*, he denies that what Einstein regards as being "a law of nature" is really such; but only himself can decide which of these contradictions he intends to maintain.

In any case, the definition of a vacuum is a negative or privative definition; *i. e.*, it depends on the negation or thinking away of a prior entity (or concept), in this case matter; a vacuum is space containing no matter. This suggests that the whole treatment of this particular point rests on a confusion between two kinds of priority—the logical and the epistemological—a subject in itself much too extensive for treatment here except very briefly. *All* experience begins (omitting the "crude substratum") with "objects" and then proceeds to "matter" and "vacuum"; still further to "*G*" and "*g*" (regarded as types), which again is one definition of "vacuum." But when this stage has been attained, the steps leading to it are overlooked—the fact that "matter" "vacuum" and "*G*" all have a common origin is neglected; and the final definition is then regarded as being something fundamental, ultimate, original,[11] to which "matter" (even clocks and scales on p. 152) is a later addition or arbitrary restriction.

This wholly illogical procedure is widely prevalent though undetected; it corrupts, *e. g.*, our notions of life, force, cause, person, and is indeed perhaps the principal source of the reigning confusion between scientific and philosophic concepts, in the strict sense of these adjectives.

E. g., consider the equation (here condensed) $G = T$, on p. 150. Now (*a*) T is "compounded from the density etc. of the matter present." It is therefore a mere tautology to say (p. 151), (*b*) this "equation teaches us what density, etc., is the perceptual equivalent of any particular value of this world-property." We are merely deriving from our equation what was previously inserted in it; and thus a simple reversal of the course of thought is misinterpreted and elevated into a fresh addition to our knowledge, while in truth it is at its best no more than a better defining of one and the same concept.

[10] Pp. 150, 151.

[11] I am not of course questioning its scientific value, only the further conclusions which it is sought to derive from it.

Much the same is true of the assertion (p. 151)—it "describes how (an) undefinable quality . . . is appreciated by the human mind." This appears at first sight to be a solution of that old problem, the relation between mind and noümenon; but its value completely vanishes[12] when we recall that the "undefinable quality" (or its basis or content—the terminology is rather obscure) has been obtained in the first instance by abstracting from "intuitive notions of space and time."[13] Indeed, this initial abstraction is so far lost sight of that "we may attribute to undefinables *whatever nature we may conceive* as best fitted to affect the mind" (p. 152, my italics). Would that philosophy could adopt this short and simple method of dealing with its noümena![14]

Such abstraction, again, plainly removes the limits or conditions which regulate mathematical procedure. This in itself is nothing new; imaginary quantities are familiar enough. It is therefore almost another tautology to observe that the "results must hold in any imaginary world just as in the actual" (p. 153); in other words, continue to hold when the originally limiting conditions have been deliberately and of set purpose removed. But it is not legitimate to elevate, without further argument, such a set of unlimited conditions into an "external World" and to create a dualism between this and the actual or real world as Professor Eddington does.[15] This again is sheer confusion, only rescued from absurdity by its naïve picturesqueness, between the logical and the ontological status of a concept. "Imagine an embryo mind surveying the external World" (p. 154); an "embryo mind," however, which "feels inborn necessity," which "seeks further" than point-events, intervals, and "*g*," and chooses matter as "suitable material"; which thus possesses to begin with a high capacity for comparison, judgment, selection, and *afterwards* develops "senses and imagination," thus violating all the canons of mental and every other type of evolution!

Philosophy, of course, can raise no objection to the concept of World or Nature as an unconditioned aggregate of entities of any kind, point-events or other. But it is, I submit, entitled to question

[12] Again, not its scientific value, but its logical or epistemological.

[13] P. 147. *Cf.* also (p. 153) "identity due to the way in which the expression has been built up from the simpler elements *g*." Again "built up" is forgotten and then the resultant "permanence" and "conservation" are regarded as entirely new concepts instead of more exact definitions of old ones; see also next note.

[14] Curiously enough we find on p. 153: "We have thus arrived at a definition of matter in terms of analytical concepts." But Professor Eddington does not seem to realize the real significance of "arrived at."

[15] Pp. 153, 154. *Cf.* p. 155; "all that Nature was required to furnish is a four-dimensional aggregate of point-events."

ab initio the ascription to this concept of an ultimate ontological status, so that it becomes the criterion, at once external and absolute, of reality, with which the actual or real world is then to be compared and valued, and from which it is regarded as produced by some mysterious operation of the mind. It would be as reasonable to multiply the figure representing the national debt by $\sqrt{-1}$ and then regard the imaginary result as the true basis of the country's financial stability.

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REVIEWS AND ABSTRACTS OF LITERATURE

Spiritual Pluralism and Recent Philosophy. C. A. RICHARDSON. Cambridge: University Press. 1919. Pp. xxi + 335.

In this volume we find anew, in the setting of recent philosophy, the central theses of Leibnitz's monadology: the unity, substantiality and eternity of the subject (monad); the identity of causality and activity; the interpretation of matter as the "appearance" of monads; the theory of the relation of the mind to the body as the dominance of one monad in a society of other cooperating monads. Spiritual pluralism is, however, not regarded by Mr. Richardson as a demonstrable, but as a most highly probable, doctrine. In his opinion, its probability has been increased, not diminished, by the contributions of such recent philosophers as Bertrand Russell and the new-realists in America; and to prove this is, I take it, the chief aim of his book. Unlike James Ward in *The Realm of Ends*, the author does not seek to present a developed picture of a pluralistic universe, but to solve certain special problems and to remove prominent misunderstandings.

In the first chapter, entitled "Scientific Method in Philosophy and the Foundations of Pluralism," it is argued that Russell's so-called "scientific method" has strengthened spiritualism by showing that matter can be reduced without remainder to constructions of sense data. It might have been added that pragmatism has shown the motive to these constructions. And against all forms of materialism and realism, spiritualism maintains its advantages: (1) of recognizing the subject of experience; (2) of explaining the world, that is, of interpreting it in terms of experience itself, instead of merely describing it in terms of abstract concepts; (3) of working with a single principle. The failure to recognize the subject of experience remains, according to the author, the great vice of the new-realism. For the existence of the self is indubitable: we can not know it "by acquaintance," but from such facts as knowing and

feeling we can infer its existence immediately; and, on the basis of our inner realization of it, we can possess much knowledge of it "by description."

Chapter 2, on "Certain Criticisms of Pluralism," is chiefly a reply to Bosanquet's and Pringle-Pattison's objections.

In Chapter 3, "The Philosophical Problem raised by the Weber-Fechner Law," the author concludes that there is no evidence for the existence of unperceived sense data in the mind and still less for their existence outside the mind. To the argument for the independence of sense data on the ground that "physics can describe the object of experience and make verifiable predictions about it without reference to the subject or to perception," the author replies: "I can observe the positions and movements of the hands of my watch, and make true predictions as to their future positions, without any reference whatever to the mainspring. Yet the latter is the *sine qua non* of all that I have observed and inferred." The author's view is that the object of experience is the appearance of one subject to another subject and is under their double control. Thus, from this point of view, the sense datum stands in two relations: the relation of presentation to the one subject, and the relation of "being the appearance of" to the other subject.

In Chapter 4, "The Notion of a Deterministic System," the author, taking his start from Russell's essay "On the Notion of Cause," is concerned to discover whether the mind can belong to a deterministic system. The answer depends on whether or not quantitative notions are significant of mind. That they are not is the author's conclusion. Determinism applies, therefore, only to sense data, not to the subject to which they are given.

Chapter 5, "The Intensity of Sense Data," reminds one of Bergson's *Les Données Immédiates de la Conscience*. The argument is that differences of intensity are not quantitative but qualitative, and that the possibility of applying quantitative terms here depends simply on the fact that sense data can be arranged as regards intensity in a certain order of qualitative similarity based on the movements of accommodation of attention.

Chapter 6, "Immortality," seeks not to answer the question, Do we live forever? but to clarify the problems involved in raising it. It is in this chapter more than elsewhere, I think, that one gets closest to the position of the author, and, I should say, most fully realizes its difficulties. For the strict monadist, there is only private time, no public time, and within the private experience, since the subject is an indivisible unity, temporal distinctions apply only to the object, and there, like all other distinctions, only approxi-

mately. The question, Do we live forever? becomes therefore meaningless, for we can not even think of a beginning or end of experience itself.

Chapter 7, "The Relation between Mind and Body," expounds the monadistic theory. For the individual experience, the body is just part of the *totum objectivum;* underlying it, however, are monads which stand in peculiarly intimate relations to the subject —through them it acts and perceives. The type of relation involved, which the author admits is not further describable, he calls immanence. Thus interpreted, the body acts as the "nurse" of the mind, bringing the mind into relation with its environment and thus mediating the development of personality. Mr. Richardson believes that death involves merely the severing of the tie between the dominant and the subordinate monads, not the extinction of the former. The body, like a tool necessary for the performance of certain work, but not absolutely indispensable, becomes eventually a hindrance rather than a help; and death, while it withdraws us from certain parts of our environment, sets free imagination, memory and intellect.

The last chapter, "Subconsciousness and Certain Abnormal Phenomena," is an effort to interpret abnormal and so-called "psychic" phenomena in terms of the monadistic thesis.

The problems raised in this book are so fundamental that a discussion of the author's hypotheses would require an extensive article. The book is written with great care and much subtlety. There is, however, a tendency to rely too much on arguments from concepts, without due inquiry into their meaning and source. Such for example is the argument for the existence of the self on page 20. In general, I think the book would gain cogency through a larger use of empirical material. One is, moreover, left somewhat "in the air" by the author's declaration that spiritual pluralism must be supplemented by some unifying principle. For where will that lead us?

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Messiahs: Christian and Pagan. WILSON D. WALLIS. Boston: Richard G. Badger. 1918. Pp. 276.

This book undertakes to show how widespread and frequent in the history of religions are the phenomena of messiahs and messianic movements. It is a useful collation of material from a wide range of sources—such as has not been made heretofore. In addition to the messianic movement in pre-christian Judaism the author gives

interesting accounts of Jewish messiahs down through the Christian era. He also includes the Mohammedan Madhi, the Buddhist expectation of a new reincarnation of Buddha, messiahs among the North American Indians, Christian millennial hopes, Bahaism, and some of the modern new cults in Christian lands.

The book is somewhat overloaded with citations of material and references, and contains very little in the way of interpretation. A large part of the author's judgments are given in the form of quotations. Aside from the universality of messianic movements the author's main thesis seems to be that such movements, on the one hand, are the product of social conditions of distress and danger, and on the other hand, are instances of individual initiative on the part of the messiah. "The messianic religions which we have seen at work," he says, "furnish examples of genuinely individual initiative, efficient in giving new trend to the social development" (p. 259). The latter part of this thesis is especially important, but it would be better established if the author had discriminated more among the great variety of movements that he has recounted. Also his interesting distinction between the culture-hero and the messiah is made without discussion or supporting evidence (p. 269). The book appears as one of the World Worships series.

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UNION THEOLOGICAL SEMINARY.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January-February, 1920. *Sur les caractères du verbe* (pp. 1–22): A. MEILLET. – ". . . the principal categories that languages have been led to create are those of the *person* . . . those of *time* and *aspect*, of *mode* and *voice*. The progress of civilization puts in evidence the category of *time;* it tends to eliminate the categories with a concrete or expressive value, and to give to abstract categories an increasing importance." *Essai sur la vie intérieure* (pp. 23–78): ETIENNE GILSON. – "The inner life coincides with the development of a personality which did not formerly exist, and for this reason is manifestly creation. Being creation it is liberty. But it is of the essence of all liberty to reveal itself to itself only in self-determination and fixation." *Introduction à la morale* (pp. 79–97): E. DURKHEIM. – These pages, edited by Marcel Mauss, constitute the last writing of Durkheim, a preliminary sketch for a work on morals. *Quelques particularités de la langue et de la pensée chinoises* (pp. 98–128; first article): M. GRANET. – "Study of the

vocabulary reveals the prodigiously concrete character of Chinese concepts: almost every word connotes singular ideas, expressing modes of perceiving aspects as particular as possible; this vocabulary translates, not the needs of a thought that classifies, abstracts, generalizes, that operates upon matter clear, distinct, and prepared for a logical organization, but on the contrary a dominant need for specification, particularization, for the picturesque; it gives the impression that the Chinese spirit proceeds by operations that are essentially synthetic, by concrete intuitions and not by analysis. . . ." "Because of the onomatopoetic character of the words they were affected from the beginning by a kind of *phonetic immobility* which rendered difficult the development of a language obtained by the creation of grammatical forms and the use of derivations. *This development became impossible when the picturizing monosyllables were associated with inflexible ideograms.*" *Revue critique.* Mercier, C., *Crime and Criminals;* Luigi Perego, *I nouvi valori filosofici e el diritto penale:* GASTON RICHARD. *Revue générale. La philosophie de l'Inde: The Heritage of India Series:* P. MASSON-OURSEL. *Analyses et Comptes rendus.* J. L. de Lanessan, *L'idéal moral du matérialisme et la guerre:* L. ARRÉAT. C. A. Strong, *The Origin of Consciousness:* L. ARRÉAT. Henri Delacroix, *La Psychologie de Stendhal:* L. ARRÉAT. A. H. Roback, *Les Interférences dans l'activité volontaire:* DR. JEAN PHILLIPE. A. Meillet, *Caractères généraux des langues germaniques:* P. MASSON-OURSEL. *Revue des Périodiques.*

PSYCHOLOGICAL BULLETIN. November, 1919. *A Method of Calculating the Pearson Coefficient of Correlation Without the Use of Deviations or Cross Multiplying* (pp. 369–370): – A mathematical explanation. *General Reviews and Summaries: Comparison of Sexes in Mental Traits* (pp. 371–373): LETA S. HOLLINGWORTH. – Eight researches are reviewed. The work yields nothing consistent as a result of the comparison of the sexes in mental traits. *Tests* (pp. 374–381): FRANK N. FREEMAN. – Sixty researches are reviewed. The review considers them in the following groups: Theory and Technique, Studies of Old Tests, New Tests, Applications of Tests. *Correlation* (pp. 382–389): JAMES BURT MINER. – Sixty-three researches are reviewed. *Special Reviews:* Robinson's *Don Quixote of Psychology:* S. I. FRANZ. *Notes and News.*

Dewey, John. Reconstruction in Philosophy. New York: Henry Holt & Co. 1920. Pp. 224.

Edman, Irwin. Human Traits and their Social Significance. Boston: Houghton Mifflin Co. 1920. Pp. xi + 467. $3.00.

Royce, Josiah. Lectures on Modern Idealism. New Haven, Conn.: Yale University Press. 1920. Pp. 266. $3.00.

NOTES AND NEWS

AMERICAN psychologists will welcome the new quarterly, *Archivio Italiano di Psicologia,* edited by Professors Kiesow and Gemelli, with the collaboration of V. Benussi (Padua), L. Botti and M. Ponzi (Turin), C. Colucci (Naples), S. De Sanctis (Rome), and E. Morselli (Genoa). The following is from the epistle to the reader with which the first number is offered to the public: "In Italy, also, psychological research has undergone notable progress in recent years, and the contributions made by Italian students are evidence that the interest in this field is growing among us. This increase of activity among Italian psychologists makes opportune the publication of this archive, designed to bring together work hitherto scattered in the proceedings of learned societies and in foreign reviews. In addition to the work thus indicated, the *Archivio* will attempt what is the function of every such periodical—to exert a stimulating influence in general upon our field, and thus to increase the activity of those that cultivate it. In the present reorganization of our country, the psychologists too must take part."

THE University of Paris has just announced the opening of an Institute of Psychology, which is to be administered by a governing board of seven members—the deans of the faculties of letters and of science, MM. Ferdinand Brunot and François Houssay, and five professors, MM. H. Delacroix, G. Dumas, P. Janet, H. Piéron, and Etienne Rabaud. The Institute will offer courses in both theoretic and applied psychology in the following branches: general, physiological, experimental, pathological and comparative. The Institute of Pedagogy, which was founded last year under the faculty of letters, will be incorporated in the new Institute as the *section pédagogique.* In addition, there will be two other sections, a *section technique d'applications générales,* and a *section d'orientation et de sélection professionnelles.* Diplomas will be given for special work in any one of these sections, and the degree of "Élève diplômé de l'institute de psychologie de l'université de Paris" will be conferred on those following the general prescribed course of study for two semesters, and passing the requisite examinations. There will also be offered an opportunity for research in the laboratories of the Institute, under the direction of one of the professors, for students working for the higher degrees.